

## REMARKS

Reconsideration of this application is respectfully requested. A declaration by the inventor, Mr. Nicholas M. Cordaro, is submitted herewith for consideration by the Examiner in conjunction with this request for a reconsideration of the final rejection.

Claim 1 has been amended to change “thread” to “threaded” to define the depending threaded section consistently. Claim 23 has been amended, in line with claim 1, to point out that the partial helical thread in the plate has the same pitch as the screw thread of the depending threaded section. It is the depending threaded section of the bone screw immediately below the unthreaded smaller diameter neck coupled with the partial (or complete) helical complementary track or thread in the plate (referred to by Mr. Cordaro as the neck lag) which allows the screw to pull the plate flush against the bone during surgery while preventing the screw from being pushed out of the plate after surgery. (Cordaro Decl. ¶ 7) The advance that this neck lag feature made to the art was subsequently recognized by one of Mr. Cordaro’s peers, i.e., Mr. Bret Barry in his published patent application no. US2006/0270793 where the locking thread 518 (Figs. 6, 7) functions as the depending threaded section of the bone screw. See Mr. Cordaro’s declaration at ¶ 20.

Claims 10 and 11 have been amended to properly depend from intermediate claims 9 and 10 which provide an antecedent for the slot referred to in the claims. Claim 19 has been amended to depend from claim 17.

Claim 24 has been amended to omit the ring, i.e., by requiring only a complete helical thread in the plate opening and claims 25 and 26 have been amended to reinsert the ring limitation. Applicant apologizes for these minor amendments at this stage of the proceedings, but believe they

are necessary to correct minor errors and with respect to claims 19 and 24 to provide applicant adequate protection. The base claims and the amended claims clearly distinguish the prior art.

Claims 1-26 and 29-30 stand rejected as being unpatentable, i.e., obvious over the teachings of Lowery U.S. Patent No. 5,364,398 (“398 patent”) in view of Ralph U.S. Patent No. 5,683,393 (“393 patent”) and Richelsoph U.S. Patent No. 6,695,846 (“846 patent”).

Independent claims, 1, 17 and 23 call for the plate opening to define at least a partial helical track with the threaded section of the bone screw, immediately below the smaller diameter, neck arranged to be threaded into and through the helical track to allow the screw to continue to be rotated into the patient’s bone to pull the plate flush against the bone while preventing the screw from being pushed out after surgery. This feature (neck lag) is missing from Lowery et al. (Cordaro Decl. ¶¶ 10-14)

The Office Action asserts that one of ordinary skill in the art would find it obvious to combine the disclosures of Lowery et al and Ralph to add a helical thread to the device of Lowery et al. This rejection is respectfully traversed. First, the Ralph patent is not reasonably pertinent to the particular problem with which the inventor was involved. (Cordaro Decl. ¶ 16) While the Ralph reference teaches an orthopedic device in the form of a rod/hook locking mechanism, the device has nothing to do with the problem faced by the inventor of this application. An Office Action must clearly and objectively prove that the applied references are “reasonably pertinent to the particular problem with which the invention was involved.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161, 1166 (Fed.Cir. 2000); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed.Cir. 1983); and *Monarch Knitting Machinery Corp. v. Sulzer Morat GmbH*,

139 F.3d 877, 881-83, 886, 45 USPQ2d 1977, 1981-82, 1985 (Fed. Cir. 1998).

As is pointed out by Mr. Cordaro, if one were interested in eliminating the locking screw of Lowery et al while preventing the bone screw from being pushed out he or she would look at U.S. Patent No. 5,544,772 and related patents. (Cordaro Decl. ¶¶ 6, 7)

Second, there is no teaching, suggestion or motivation in either of such cited references to add the threaded bore or shaft of Ralph to the Lowery et al plate/screw system. Before a conclusion of obviousness may be made based on a combination of references, there must have been a reason, suggestion, or motivation to lead an inventor to combine those references. *ACS Hosp. Sys., Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (“ACS”); *Pro-Mold and Tool Co., Inc. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (C.A.Fed. (Ohio), 1966). “When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references.” *In re Rouffet*, 149 F.3d 1350, 1355, 47 U.S.P.Q.2D (BNA) 1453, 1456 (Fed. Cir. 1998) (citing *In re Geiger*, 815 F.2d 686, 688, 2 U.S.P.Q.2D (BNA) 1276, 1278 (Fed. Cir. 1987)).

It is respectfully submitted that only through hindsight would one be led to modify the Lowery et al plating system to conform to the parameters of the claimed invention.

“Determination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546, 48 USPQ2d 1321, 1329 (Fed. Cir. 1998).

Furthermore, such a modification would result in the omission of the locking screw which Lowery et al considers essential to the operation of their system, i.e., to restrict the bone screws from

rotating within the plate. (Cordaro Decl. ¶ 17) The Lowery et al reference teaches away from any modification which meets the parameters of the claimed invention. A reference teaches away from a claimed invention where there is an omission of some element or feature deemed essential to the operation of the prior art. *In re Duva*, 387 F.2d 402, 407, 156 USPQ 90, 94 (CCPA 1967)

To leave the locking screw of Lowery et al in place would not only create redundancy, but would not meet the claim terminology, i.e., allowing the bone screw to be removed by reversing its rotation.

The Richelsoph patent, No. 6,695,846 was cited as disclosing a ring to allow a screw to better fit into the threaded opening. The Richelsoph ring 16 is rotated (or slid in some embodiments) between a locked position in which the bone screw is retained in the plate and an unlocked position in which the screw may be removed. (8:1-14) The ring is not provided with a partial or complete helical thread and does not function like the ring called for in claims 13, 19-22 and 25.

For the above reasons, and those pointed out in Mr. Cordaro's declaration, the plate system called for in claims 1-26 and 29-30 would not have been obvious over the cited references taken in any combination. Such claims are now believed to be allowable.

In addition, the added limitation of the slot arrangement of claims 7-12, 18 and 25-26, with the partial helical track formed at one end, is missing from the references. It is acknowledged that (slot) claims 8-10, 14, 19-22 and 24-26 were indicated as containing allowable subject matter, but it is believed that applicant is entitled to broader claims in view of the lack of any teaching of the neck lag feature in which a simple plate and screw, per se, prevent screw back out while allowing the plate to be pulled flush against the vertebral bodies to be stabilized.

Appl. No. 10/679,012  
Amendment Dated February 8, 2007  
Reply to Office Action dated December 28, 2006

The undersigned has requested that his associate in the Washington, D.C. area, deliver to the Examiner, commercial specimens of the Medtronic Orion plate/screw system (described in the Lowery et al reference) and the SeaSpine buttress plate referred to in Mr. Cordaro's declaration.

This application is now believed to be in condition for allowance and such allowance is respectfully requested. If applicants' attorney can be of any further assistance please call the undersigned at the number provided.

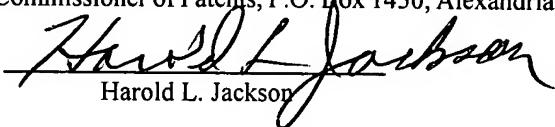
Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 8, 2007.

February 8, 2007

  
Harold L. Jackson